

REMARKS

The present application is U.S. Serial No. 10/706,672, filed November 11, 2003. Claims 1-33 are pending in the application. Claims 1-33 are rejected. Claim 20 is objected to. Applicant respectfully traverses these rejections.

Claim Rejections Under 35 U.S.C. 103

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sankrithi et al. (6405975), (hereinafter referred to as "Sankrithi") in view of Ramachandran et al. (6405975), (hereinafter referred to as "Ramachandran"). "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP § 2143. Failure to meet just one of these three criteria is sufficient to overcome an obviousness rejection. In the present case, the combination of the references does not include all of the features of the claims.

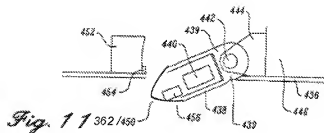
Claims 1-7

Independent claim 1 as amended recites

"at least one sensor operable to capture images representing scenery outside the vehicle;
a protective housing enclosing the at least one sensor, wherein the protective housing further comprises a transparent aperture through which the at least one sensor captures images, wherein the transparent aperture further comprises a rotating transparent conical surface;
a cleaning mechanism operable to remove obstructions from the transparent aperture without interfering with the field of view of the at least one sensor".

The amended portion of claim 1, as underlined above, is supported by at least paragraph [0030] of the specification. The aperture 450 of Sankrithi is a slightly curved lens at one end of housing 438 that is cleaned by a rubbery squeegee type cleaner 454 as the opposite end of

housing 438 rotates at pin 442. (See Sankrithi FIG.11 and col. 9 lines 1-15). If the lens in Sankrithi is replaced with the bullet shaped nose portion 362 of housing 360 in Ramachandran as suggested in paragraph 1 of the Office Action, only the tip of the bullet shaped nose portion 362 would be cleaned, as shown below in FIG. 11 of Sankrithi modified with the bullet shaped nose portion 362 of Ramachandran replacing lens 450 of Sankrithi. Squeegee 454 can only clean nose portion 362 when housing 438 rotates upward or downward, thereby changing the field of view of the sensor. Additionally, when housing 438 rotates upward, the field of view of the sensor will be blocked. The combination of Sankrithi and Ramachandran does not teach all of the claim limitations because cleaning the tip of nose portion 362 interferes with the field of view of the sensor.



Further, if any other portion beside the tip of the bullet shaped nose were dirty, the squeegee in Sankrithi would not be able to remove obstructions from the transparent aperture so that the sensor 456 could capture images, as required in claim 1. Additionally, the nose portion in Ramachandran is not fabricated from transparent material and the cylindrical portions 370 (FIG. 10 in Ramachandran) protruding from the nose portion would interfere with the line of sight of the sensor. Thus, the cited references do not anticipate or make obvious the features set forth in claim 1.

Claims 2-7 depend from claim 1 and include features that further distinguish them from the cited references.

Claims 8-13

Independent claim 8 recites

- "a protective housing enclosing the at least one sensor, wherein the protective housing further comprises a transparent aperture through which the at least one sensor captures images, wherein the transparent aperture further comprises a rotating cone;
- a cleaning mechanism operable to remove obstructions from an outer surface of the transparent aperture, wherein the cleaning mechanism is located within the protective housing and outside of a field of view of the at least one sensor". (Emphasis added).

Claim 8 is distinguishable from the cited references for reasons similar to those stated above for claim 1. In particular, the combination of Sankrithi and Ramachandran does not teach all of the claim limitations because the squeegee 454 will be in the field of view of the sensor during the cleaning process as the housing 438 rotates upward. Further, if any other portion beside the tip of the bullet shaped nose were dirty, the squeegee in Sankrithi would not be able to remove obstructions from the aperture so that the sensor 456 could capture images representing scenery outside the vehicle, as required in claim 8. Additionally, the nose portion in Ramachandran is not fabricated from transparent material and the cylindrical portions 370 (FIG. 10 in Ramachandran) protruding from the nose portion would interfere with the line of sight of the sensor. Thus, the cited references do not anticipate or make obvious the features set forth in claim 8.

Claims 9-13 depend from claim 8 and include features that further distinguish them from the cited references.

Claims 14-18

Independent claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sankrithi. Claim 14 recites "outputting image of the scenery outside the vehicle to a first display device, wherein the display device is positioned to provide the portion of a desired out-the window visual scene in combination with a window that provides another portion of the desired out-the-window visual scene." The claimed configuration is shown at least in FIG. 5B and described at least in paragraph [0038] of the present application. In contrast, the cited figure 6A of Sankrithi shows multiple display devices showing different portions of the landing gear, but the display devices do not provide a portion of the desired out-the-window scene in combination with a window that provides another portion of the out-the-window

scene. In Sankrithi, the scenes of the landing gear on the display devices is not the same as the out-the-window view provided by the window. Although the display devices in Sankrithi show different portions of the landing gear, Sankrithi differs from claim 14, which requires that the display device and the window show different portions of the scene, not multiple scenes (i.e., the landing gear scene and the out-the-window scene). Claim 14 is distinguishable from Sankrithi for at least these reasons.

Claims 15-18 depend from claim 14 and include features that further distinguish them from the prior art.

Claims 19-30

Claims 19-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sankrithi et al. (6405975), (hereinafter referred to as "Sankrithi") in view of Ramachandran et al. (6405975), (hereinafter referred to as "Ramachandran"), in further view of Jamieson et al. (6665063), (hereinafter referred to as "Jamieson"). Claim 19 recites features similar to Claim 14, specifically "output the first operator viewpoint image to the display device, wherein the display device is positioned to provide the portion of a desired out-the window visual scene in combination with a window that provides another portion of the desired out-the-window visual scene." The claimed configuration is shown at least in FIG. 5B and described at least in paragraph [0038] of the present application. In contrast, the cited figure 6A of Sankrithi shows views of the landing gear displayed to the user, but the display devices do not provide a portion of the desired out-the-window scene in combination with a window that provides another portion of the same out-the-window scene. In Sankrithi, the scenes of the landing gear on the display devices is not the same as the out-the-window view provided by the cockpit window. Although the display devices in Sankrithi show different portions of the landing gear, Sankrithi differs from claim 19, which requires that the display device and the window show different portions of the [same] scene. Claim 19 is therefore believed to be distinguishable from the cited references for at least these reasons.

Claims 20-30 depend from claim 19 and include features that further distinguish from the prior art. For example, claim 30 recites "generate a common display area associated with two mutually exclusive windows of information on the display device, the area being

customized by the operator to display detailed information". In contrast, the cited portion of Sankrithi does not show the common display area on the same display device as the two mutually exclusive windows of information, as required in claim 30. Claim 30 is further distinguishable from Sankrithi for at least these additional reasons.

Claims 31-33

Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sankrithi et al. (6405975), (hereinafter referred to as "Sankrithi") in view of Ramachandran et al. (6405975), (hereinafter referred to as "Ramachandran"), in further view of Jamieson et al. (6665063), (hereinafter referred to as "Jamieson"). Claim 31 as amended recites "a first cleaning mechanism cleans the first transparent aperture to remove obstructions to the first sensor's field of view without interfering with the field of view of the first sensor" and is distinguishable from the cited references for reasons similar to those stated above for claim 1. In particular, the combination of Sankrithi and Ramachandran does not teach all of the claim limitations because the squeegee 454 interferes with the field of view of the sensor during the cleaning process. Further, if any other portion beside the tip of the bullet shaped nose were dirty, the squeegee in Sankrithi would not be able to remove obstructions from the aperture so that the sensor 456 could capture images representing scenery outside the vehicle, as required in claim 31. Additionally, the nose portion in Ramachandran is not fabricated from transparent material and the cylindrical portions 370 (FIG. 10 in Ramachandran) protruding from the nose portion would interfere with the line of sight of the sensor. Squeegee 454 can only clean nose portion 362 when housing 438 rotates upward or downward, thereby changing the field of view of the sensor. Additionally, when housing 438 rotates upward, the field of view of the sensor will be blocked. The combination of Sankrithi and Ramachandran does not teach all of the claim limitations because cleaning the tip of nose portion 362 interferes with the field of view of the sensor. Thus, the cited references do not anticipate or make obvious the features set forth in claim 31.

Claims 32-33 depend from claim 31 and include features that further distinguish from the prior art.

CONCLUSION

Applicant believes the application including claims 1-33 is in condition for allowance and notice to that effect is solicited. In the event it would facilitate prosecution of this application, the Examiner is invited to telephone the undersigned at (949) 350-7301.

I hereby certify that this correspondence is being transmitted to the USPTO on the date shown below:

/Mary Jo Bertani/
(Signature)

Mary Jo Bertani
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January 21, 2008
(Date)

Respectfully submitted,

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